

4.1.3.1.1.1.4 Routing and Numbering Plan

TSM0024-This requirement shall be verified by analysis.

4.1.3.1.1.1.5 Commercial Circuit Switch Management and Administration

TSM0025-This requirement shall be verified by demonstration.

TSM0026-This requirement shall be verified by examination.

TSM0027-This requirement shall be verified by examination.

TSM0028-This requirement shall be verified by analysis.

TSM0029-This requirement shall be verified by demonstration.

TSM0030-This requirement shall be verified by demonstration.

4.1.3.1.1.1.6 Circuit Switch Certifications

TSM0031- This requirement shall be verified by examination.

4.1.3.1.2 Remote Call Service Attendant

TSM0032-This requirement shall be verified by demonstration.

TSM0033-This requirement shall be verified by demonstration.

TSM0034-This requirement shall be verified by test.

4.1.3.1.3 ISDN Terminal Adapters

TSM0035-This requirement shall be verified by test.

4.1.3.1.4 Channel Service Unit (CSU)/Digital Service Unit (DSU)

TSM0036-This requirement shall be verified by test.

4.1.3.1.5 DEOS Signal/Power Entry Panel

TSM0037- This requirement shall be verified by examination.

TSM0038- This requirement shall be verified by analysis.

4.1.3.1.6 DEOS Uninterruptible Power Supply

TSM0039- This requirement shall be verified by demonstration.

4.1.3.2 Remote Subscriber Access Module (RSAM)

TSM0040-This requirement shall be verified by test.

TSM0041-This requirement shall be verified by analysis.

TSM0042-This requirement shall be verified by examination.

TSM0043-This requirement shall be verified by demonstration.

TSM0044-This requirement shall be verified by analysis.

4.1.3.3 Deployable Integrated Transport Suite (DITS)

TSM0045-This requirement shall be verified by demonstration.

4.1.3.3.1 Transmission Resource Controller

TSM0046- This requirement shall be verified by demonstration.

4.1.3.3.1.1 Priority

TSM0047-This requirement shall be verified by demonstration.

4.1.3.3.1.2 Routing

TSM0048-This requirement shall be verified by demonstration.

4.1.3.3.1.3 Alarms

TSM0049-This requirement shall be verified by demonstration.

4.1.3.3.1.4 Events

TSM0050-This requirement shall be verified by demonstration.

4.1.3.3.1.5 Voice Call Compression and Echo Cancellation

TSM0051-This requirement shall be verified by analysis.

TSM0052-This requirement shall be verified by examination.

TSM0053-This requirement shall be verified by examination.

4.1.3.3.1.6 ISDN Switching

TSM0054-This requirement shall be verified by examination.

4.1.3.3.1.7 TRC Interfaces

TSM0055-This requirement shall be verified by examination.

4.1.3.3.1.7.1 TRC Standard Port Interfaces

TSM0056-This requirement shall be verified by examination.

4.1.3.3.1.7.2 TRC Trunk Interfaces

TSM0057-This requirement shall be verified by examination.

4.1.3.3.2 DITS Technical Control Functions

TSM0058-This requirement shall be verified by analysis.

4.1.3.3.2.1 Modems

TSM0059-This requirement shall be verified by test.

4.1.3.3.2.2 Transmission Security

TSM0060-This requirement shall be verified by examination.

TSM0061-This requirement shall be verified by analysis.

4.1.3.3.2.3 Timing Distribution

TSM0062-This requirement shall be verified by demonstration.

4.1.3.3.2.4 Patching Requirements

TSM0063-This requirement shall be verified by demonstration.

TSM0064-This requirement shall be verified by demonstration.

TSM0065-This requirement shall be verified by demonstration.

TSM0066-This requirement shall be verified by examination.

4.1.3.3.2.5 DITS Signal/Power Entry Panel

TSM0067-This requirement shall be verified by examination.

TSM0068-This requirement shall be verified by examination.

4.1.3.3.2.6 DITS Man-Machine Interfaces

TSM0069-This requirement shall be verified by examination.

4.1.3.3.2.7 DITS Uninterruptible Power Supply

TSM0070-This requirement shall be verified by demonstration.

4.1.3.4 TSM Objective Capabilities

TSM0071-N/A

4.1.3.4.1 Voice Over Internet Protocol (VoIP)

TSM0072-If provided, this requirement shall be verified by test.

4.1.3.4.2 Wireless Telephony

TSM0073-If provided, this requirement shall be verified by test.

4.2 System Characteristics

TSM0074-This requirement shall be verified by examination.

4.2.1 Not Used

4.2.2 Operational State

TSM0075-This requirement shall be verified by demonstration.

4.2.3 Storage and Transport State

TSM0076-This requirement shall be verified by demonstration.

4.2.4 Not Used

4.2.5 Physical Characteristics

4.2.5.1 Transportation and Storage

4.2.5.1.1 Transport

TSM0077-This requirement shall be verified by analysis.

- a. **TSM0078**-This requirement shall be verified by analysis for C-130 and CH-53 environments.
- b. **TSM0079**-This requirement shall be verified by analysis of TSM0120 test data using the vibration profiles of MIL-STD-810F, Test Method 514.5 as guidance.
- c. **TSM0080**-This requirement shall be verified by analysis for an Landing Craft Air Cushion (LCAC) environment.

TSM0081-This requirement shall be verified by analysis.

4.2.5.1.2 Storage

TSM0082-An analysis shall be performed to ensure compliance with the storage requirements of paragraph 3.2.5.1.2. The TSM shall be stored without power, heat, and air conditioning for a period of 30 days. Batteries will be removed before the storage period to prevent corrosion.

4.2.5.2 Transit Case Requirements

TSM0083-This requirement shall be verified by analysis..

TSM0084-This requirement shall be verified by demonstration.

4.2.5.2.1 Cooling

TSM0085-This requirement shall be verified by test.

4.2.5.2.2 COMSEC/TRANSEC

TSM0086-This requirement shall be verified by examination.

TSM0087-This requirement shall be verified by examination.

4.2.5.2.3 Weight

TSM0088-This requirement shall be verified by examination.

4.2.5.2.4 Dimensions

TSM0089-This requirement shall be verified by examination.

4.2.5.2.5 Construction

TSM0090-This requirement shall be verified by analysis.

4.2.5.2.6 Rack Mount

TSM0091- This requirement shall be verified by examination.

4.2.5.2.7 Paint and Finish

- a. **TSM0092**-This requirement shall be verified by examination.
- b. **TSM0093**-This requirement shall be verified by examination.
- c. **TSM0094**-This requirement shall be verified by analysis.
- d. **TSM0095**-This requirement shall be verified by demonstration.

4.2.5.2.8 Power Cables

- a. **TSM0096**-This requirement shall be verified by examination.
- b. **TSM0097**-This requirement shall be verified by examination.
- c. **TSM0098**-This requirement shall be verified by examination.

4.2.5.2.9 Transit Case Wiring

- a. **TSM0099**-This requirement shall be verified by examination.
- b. **TSM0100**-This requirement shall be verified by examination.
- c. **TSM0101**-This requirement shall be verified by examination.
- d. **TSM0102**-This requirement shall be verified by examination.
- e. **TSM0103**-This requirement shall be verified by examination.
- f. **TSM0104**-This requirement shall be verified by examination.

4.2.5.3 Electrical and Power Requirements

4.2.5.3.1 Normal Power

TSM0105-This requirement shall be verified by demonstration.

4.2.5.3.2 Uninterruptable Power

TSM0106-This requirement shall be verified by demonstration.

4.2.6 System Quality Factors

4.2.6.1 Reliability

TSM0107-The DEOS Mean Time Between Failures shall be verified by analysis.

TSM0108-The DITS Mean Time Between Failures shall be verified by analysis.

TSM0109-The RSAM Mean Time Between Failures shall be verified by analysis.

4.2.6.2 Maintainability

4.2.6.2.1 Organizational Level Mean Time To Repair

TSM0110-The Organizational Mean Time To Repair for corrective maintenance shall be verified by analysis.

4.2.6.2.2 Intermediate Level Mean Time To Repair

TSM0111-The Intermediate Mean Time To Repair for corrective maintenance shall be verified by analysis.

4.2.6.2.3 Mean Time To Perform Preventive Maintenance

TSM0112- The Mean Time To Perform Preventive Maintenance shall be verified by analysis.

4.2.7 Environmental Conditions

TSM0113-The TSM shall be tested to ensure compliance with the deployment requirements of Paragraph 3.2.7.

4.2.7.1 Altitude

TSM0114- Operating, storage and transport altitude requirements for the TSM shall be verified by analysis. Pressure equalization shall be verified by examination of the transit case pressure relief valves.

4.2.7.2 Temperature

TSM0115- Storage and transport temperature requirements shall be tested in accordance with MIL-STD-810F, Method 501.4, Procedure I and Method 502.4, Procedure I. Operating temperature requirements shall be tested in accordance with MIL-STD-810F, Method 501.4, Procedure II and Method 502.4, Procedure II. The high temperature test shall use the parameters in Table 501.4-11 for induced conditions.

4.2.7.3 Humidity

TSM0116- An analysis of the transit case design and components shall be performed to verify compliance with the requirements of paragraph 3.2.7.3.

4.2.7.4 Sand and Dust

TSM0117-The blowing sand requirement shall be tested in accordance with MIL-STD-810F, Test Method 510.4, Procedure II. The settling dust requirement shall be tested in accordance with MIL-STD-810F, Test Method 510.4, Procedure III.

4.2.7.5 Salt Fog

TSM0118-An analysis of the transit case design and materials shall be performed to verify compliance with the requirements of paragraph 3.2.7.5.

4.2.7.6 Fungus

TSM0119-An analysis shall be performed to verify compliance with the requirements of paragraph 3.2.7.6.

4.2.7.7 Shock and Vibration

TSM0120- Tests shall be performed on the TSM to verify compliance with the vibration requirements associated with transport and defined in paragraph 3.2.7.7. Each TSM fully loaded transit case shall be subjected to the Shaker Table Test described by Method 514.5, Procedure I, Table 514.5C-VII of MIL-STD-810F for 30 minutes per axis and the Transit Drop Test described by Method 516.5, Procedure IV of MIL-STD-810F. Cargo netting or strapping may be used in the Shaker Table test only to prevent the test item from "bouncing" off the test table. Operational tests shall be performed both before and after the bounce test, and there shall be no evidence of physical damage.

4.2.7.8 Ice and Snow

TSM0121-An analysis shall be performed to verify compliance with the requirements specified in Paragraph 3.2.7.8.

4.2.7.9 Acoustic Noise

TSM0122- A test shall be conducted to verify compliance of the requirements of paragraph 3.2.7.9.

4.2.7.10 Rain

TSM0123-The water tightness of the transit cases shall be tested in accordance with MIL-STD-810F, Test Method 506.4, Procedure II.

4.2.7.11 Lightning

- a. **TSM0124-**This requirement shall be verified by analysis.
- b. **TSM0125-**This requirement shall be verified by analysis.
- c. **TSM0126-**This requirement shall be verified by analysis.
- d. **TSM0127-**This requirement shall be verified by analysis.
- e. **TSM0128-**This requirement shall be verified by analysis
- f. **TSM0129-**N/A.
- g. **TSM0130-**N/A.

4.2.8 Deployment Requirements

TSM0131-This requirement shall be verified by demonstration.

4.2.8.1 Setup

- a. **TSM0132-**This requirement shall be verified by demonstration.
- b. **TSM0133-**This requirement shall be verified by demonstration.

4.2.8.2 Teardown

- a. **TSM0134**-This requirement shall be verified by demonstration.
- b. **TSM0135**-This requirement shall be verified by demonstration.

4.3 Design and Construction

TSM0136-This requirement shall be verified by examination.

4.3.1 Material, Parts and Processes

TSM0137-This requirement shall be verified by examination.

4.3.1.1 Connectors

TSM0138-This requirement shall be verified by examination.

4.3.1.2 Fastener Hardware

TSM0139-This requirement shall be verified by examination.

4.3.1.3 Tolerance

TSM0140-This requirement shall be verified by analysis.

4.3.1.4 Corrosion Control

TSM0141- This requirement shall be verified by examination. Evidence of contact of dissimilar metals, such as galvanic corrosion, shall be examined.

4.3.1.5 Equipment Electrical Grounding Scheme

TSM0142-This requirement shall be verified by examination.

4.3.1.6 Transit Case Electrical Grounding Scheme

TSM0143-This requirement shall be verified by examination.

4.3.1.7 Electrostatic Discharge

TSM0144-This requirement shall be verified by examination.

4.3.2 Electromagnetic Interference / Electromagnetic Compatibility

TSM0145-This requirement shall be verified by examination.

TSM0146-TSM EMI requirements of paragraph 3.3.2 shall be tested in accordance with MIL-STD-461E.

4.3.3 Identification and Marking

TSM0147-This requirement shall be verified by examination.

4.3.3.1 Nameplates and Product Marking

- a. **TSM0148**-This requirement shall be verified by examination.
- b. **TSM0149**-This requirement shall be verified by examination.
- c. **TSM0150**-This requirement shall be verified by examination.
- d. **TSM0151**-This requirement shall be verified by demonstration.
- e. **TSM0152**-This requirement shall be verified by examination.
- f. **TSM0153**-This requirement shall be verified by analysis.
- g. **TSM0154**-This requirement shall be verified by analysis.
- h. **TSM0155**-This requirement shall be verified by examination.
- i. **TSM0156**-This requirement shall be verified by examination.
- j. **TSM0157**-This requirement shall be verified by examination.
- k. **TSM0158**-This requirement shall be verified by examination.

4.3.4 Workmanship

The transit cases shall be examined for defects. All welding shall be inspected prior to application of paint finish.

TSM0159-This requirement shall be verified by examination.

4.3.5 Interchangeability

TSM0160-This requirement shall be verified by analysis.

4.3.6 Safety

4.3.6.1 Electrical Design

TSM0161-This requirement shall be verified by analysis.

4.3.6.2 Radio Frequency and X-radiation Safety

TSM0162-This requirement shall be verified by analysis.

4.3.6.3 Equipment Safety

TSM0163- N/A

- a. **TSM0164**-This requirement shall be verified by examination.
- b. **TSM0165**-This requirement shall be verified by examination.
- c. **TSM0166**-This requirement shall be verified by examination.

4.3.6.4 Chemical Safety

TSM0167-N/A

- a. **TSM0168**-This requirement shall be verified by analysis.
- b. **TSM0169**-This requirement shall be verified by analysis.
- c. **TSM0170**-This requirement shall be verified by examination.
- d. **TSM0171**-This requirement shall be verified by examination.

4.3.7 Human Engineering

TSM0172-This requirement shall be verified by examination. Human performance and engineering demonstrations shall ensure the transit case design, layout, and equipment arrangement are in compliance with the human engineering requirements of paragraph 3.3.7, using MIL-STD-1472 as a guide, and life support parameters specified herein.

4.3.8 Nuclear, Biological and Chemical Safety

- a. **TSM0173**-This requirement shall be verified by analysis.
- b. **TSM0174**- This requirement shall be verified by demonstration.

4.4 Methods of Verification

All system performance and integration design requirements for the TSM, as detailed in Section 3 of this document, shall be verified by Analysis, Demonstration, Examination, or Test. These verification methods are defined as follows:

4.4.1 Analysis

Verification by analysis involves proving that an item meets specified requirements by a technical evaluation of equations, charts, graphs, circuit diagrams and/or representative data. Through reviews of applicable and adequate documentation, it will be proven that the requirements have been met. Each specified piece of equipment will be identified and any specified quantities will be verified.

4.4.2 Demonstration

Verification that a specification requirement is met by observation of the operation or movement of the item. Non-developmental items, COTS, and GFM are considered as demonstration methods only since their implicit design has been adequately tested. Test procedures will be developed to ensure that each individual item operates as specified. Those equipment determined to be defective will be replaced.

4.4.3 Examination

Verification by inspection, physical manipulation, gauging, measurement, or counting involves a visual examination of the item, reviewing descriptive documentation, and comparing characteristics with a predetermined standard to determine conformance to requirements. Each specified piece of equipment will be identified and any specified quantities will be verified.

4.4.4 Test

Through functional and electrical means, the systematic operation of the item under required conditions, with instrumentation of the item and/or the recording/evaluation of quantitative and qualitative data will be used to prove that the requirements have been met.

4.5 Classes of Verification

The system test program shall provide incremental integrated testing that will require components to be individually tested, and then integrated with other tested components for the next level of testing. The integration and testing process continues until the total system is tested. Each test and test level shall constitute a step in providing successful system test and performance.

The TSM contractor shall be responsible for the preparation, conduct and data reduction of all tests necessary to verify compliance with requirements set forth in Paragraph 3. Test Plans and Test Procedures and Descriptions shall be developed by the contractor in accordance with the Statement of Work (SOW). The Government reserves the right to observe any of the verifications set forth herein. The Government reserves the right to perform any verifications where the Government deems such verifications necessary. Table IV correlates the Section 3 requirements with the Section 4 verification method(s) used to ensure compliance based on the class of verification being conducted.

4.5.1 First Article Test

The purpose of First Article Test (FAT) is to verify the TSM meets the requirements of this PD and ensure the design is ready for production. The FAT consists of Hardware Testing and System Integration Testing (SIT). Verifications identified in Table IV under column A with an "X" shall be conducted during FAT (either or both Hardware Testing and SIT).

- a. Hardware Testing. Hardware Testing verifies the physical, environmental, and functional requirements of the TSM. Hardware Testing shall be conducted at the contractor's facility unless otherwise approved by the Government.
- b. System Integration Testing. SIT shall be conducted in an operational environment using the tactical equipment and interface required by this specification. The SIT shall verify the operational suitability of the TSM for the Marine Corps' use by evaluating availability, compatibility, interoperability, reliability, maintainability, safety, human

factors, logistics supportability, and training requirements have been satisfied. SIT shall be conducted at a Government location.

4.5.1.1 Hardware Verification

Hardware verification shall be performed by the contractor in accordance with the contractor's Quality Program as delineated in the contractor SOW and the requirements of section 3.

4.5.1.2 Software Verification

Software verification shall be performed by the contractor in accordance with the guidance of IEEE/EIA 12207 as delineated in the contractor SOW and the requirements of section 3.

4.5.2 Production Acceptance

Production Acceptance verifies the physical, environmental, and functional requirements of the production units meet the TSM requirements. Production Acceptance Test Phase I (PAT I) shall be conducted at the contractor's facility. Verifications identified in Table IV under column B with an "X" shall be conducted during PAT I. Production Acceptance Test Phase II (PAT II) shall be conducted at destination. Verifications identified in Table IV under column C with an "X" shall be conducted during PAT II.

4.5.3 Special Tests and Examinations

After successful completion of FAT, the TSM First Articles shall be submitted by the contractor for evaluation by the Marine Corps Operational Test Agency. The TSM will be subjected to an additional series of tests conducted at the operational fielding sites. These tests will be conducted by the Government.

TABLE IV. Requirement/Verification Cross-Reference Matrix

<u>VERIFICATION METHOD</u>		<u>VERIFICATION CLASS</u>												
N/A – NOT APPLICABLE		A – FIRST ARTICLE Hardware Testing												
1 – ANALYSIS		B – PAT I												
2 – DEMONSTRATION		C – PAT II												
3 – EXAMINATION		D – FIRST ARTICLE SIT (Gov't Conducted)												
4 – TEST		CSR – CRITICAL SYSTEM REQUIREMENT KPP – KEY PERFORMANCE PARAMETER												
ORD	SECTION 3 REQUIREMENT	REQUIREMENT ID NUMBER	KPP	CSR	SECTION 4 REQUIREMENT	VERIFICATION METHOD				VERIFICATION CLASS				
						N/A	1	2	3	4	A	B	C	D
4.1.1.8e	3.1.3.1.1.1.2	TSM0022			4.1.3.1.1.1.2			X			X	X		
4.1.1.6	3.1.3.1.1.1.3	TSM0023		X	4.1.3.1.1.1.3					X	X	X		X
4.1.1.6	3.1.3.1.1.1.4	TSM0024			4.1.3.1.1.1.4		X				X			
4.1.1.6	3.1.3.1.1.1.5	TSM0025			4.1.3.1.1.1.5			X			X			
4.1.1.6	3.1.3.1.1.1.5	TSM0026			4.1.3.1.1.1.5				X		X	X		X
4.1.1.6	3.1.3.1.1.1.5	TSM0027			4.1.3.1.1.1.5				X		X	X		
4.1.1.6	3.1.3.1.1.1.5	TSM0028		X	4.1.3.1.1.1.5		X				X			
4.1.1.6	3.1.3.1.1.1.5	TSM0029			4.1.3.1.1.1.5			X			X			
4.1.1.6	3.1.3.1.1.1.5	TSM0030			4.1.3.1.1.1.5			X			X			
4.1.1.6	3.1.3.1.1.1.6	TSM0031	X		4.1.3.1.1.1.6				X		X			
4.1.1.6	3.1.3.1.2	TSM0032			4.1.3.1.2			X			X			
4.1.1.6	3.1.3.1.2	TSM0033			4.1.3.1.2			X			X			
4.1.1.6	3.1.3.1.2	TSM0034		X	4.1.3.1.2						X	X		X
4.1.1.6	3.1.3.1.3	TSM0035			4.1.3.1.3						X	X		X
4.1.1.6	3.1.3.1.4	TSM0036		X	4.1.3.1.4						X	X		X
4.1.1.8f	3.1.3.1.5	TSM0037			4.1.3.1.5				X		X			
4.1.1.6	3.1.3.1.5	TSM0038			4.1.3.1.5		X				X	X		
4.1.1.7	3.1.3.1.6	TSM0039	X		4.1.3.1.6			X			X			
4.1.1.6	3.1.3.2	TSM0040			4.1.3.2						X	X		X
4.1.1.6	3.1.3.2	TSM0041			4.1.3.2		X				X	X		
4.1.1.6	3.1.3.2	TSM0042			4.1.3.2				X		X	X		
4.1.1.7	3.1.3.2	TSM0043	X		4.1.3.2			X			X	X		

TABLE IV. Requirement/Verification Cross-Reference Matrix

<u>VERIFICATION METHOD</u>		<u>VERIFICATION CLASS</u>															
N/A – NOT APPLICABLE		A – FIRST ARTICLE Hardware Testing															
1 – ANALYSIS		B – PAT I															
2 – DEMONSTRATION		C – PAT II															
3 – EXAMINATION		D – FIRST ARTICLE SIT (Gov't Conducted)															
4 – TEST		CSR – CRITICAL SYSTEM REQUIREMENT KPP – KEY PERFORMANCE PARAMETER															
ORD	SECTION 3 REQUIREMENT	REQUIREMENT ID NUMBER	KPP	CSR	SECTION 4 REQUIREMENT	VERIFICATION METHOD				VERIFICATION CLASS							
						N/A	1	2	3	4	A	B	C	D			
4.1.1.6	3.1.3.2	TSM0044			4.1.3.2		X						X				
4.1.1.7	3.1.3.3	TSM0045		X	4.1.3.3			X					X				
4.1.1.7	3.1.3.3.1	TSM0046		X	4.1.3.3.1			X					X				
4.1.1.7	3.1.3.3.1.1	TSM0047			4.1.3.3.1.1			X					X				
4.1.1.7	3.1.3.3.1.2	TSM0048			4.1.3.3.1.2			X					X				
4.1.1.7	3.1.3.3.1.3	TSM0049			4.1.3.3.1.3			X					X				
4.1.1.7	3.1.3.3.1.4	TSM0050			4.1.3.3.1.4			X					X				
4.1.1.7	3.1.3.3.1.5	TSM0051		X	4.1.3.3.1.5			X					X				
4.1.1.7	3.1.3.3.1.5	TSM0052			4.1.3.3.1.5				X				X				
4.1.1.7	3.1.3.3.1.5	TSM0053			4.1.3.3.1.5				X				X				
4.1.1.6	3.1.3.3.1.6	TSM0054	X		4.1.3.3.1.6					X			X				
4.1.1.7	3.1.3.3.1.7	TSM0055			4.1.3.3.1.7					X			X				
4.1.1.7	3.1.3.3.1.7.1	TSM0056		X	4.1.3.3.1.7.1					X			X				
4.1.1.7	3.1.3.3.1.7.2	TSM0057			4.1.3.3.1.7.2					X			X				
4.1.1.7	3.1.3.3.2	TSM0058			4.1.3.3.2					X			X				
4.1.1.7	3.1.3.3.2.1	TSM0059		X	4.1.3.3.2.1					X			X				X
4.1.1.8f	3.1.3.3.2.2	TSM0060		X	4.1.3.3.2.2					X			X				
4.1.1.8a	3.1.3.3.2.2	TSM0061			4.1.3.3.2.2					X			X				
4.1.1.7	3.1.3.3.2.3	TSM0062		X	4.1.3.3.2.3					X			X				
4.1.1.7	3.1.3.3.2.4	TSM0063			4.1.3.3.2.4					X			X				
4.1.1.7	3.1.3.3.2.4	TSM0064		X	4.1.3.3.2.4					X			X				
4.1.1.7	3.1.3.3.2.4	TSM0065			4.1.3.3.2.4					X			X				

TABLE IV. Requirement/Verification Cross-Reference Matrix

VERIFICATION METHOD		VERIFICATION CLASS												
N/A – NOT APPLICABLE		A – FIRST ARTICLE Hardware Testing		B – PAT I		C – PAT II		D – FIRST ARTICLE SIT (Gov't Conducted)		CSR – CRITICAL SYSTEM REQUIREMENT		KPP – KEY PERFORMANCE PARAMETER		
ORD	SECTION 3 REQUIREMENT	REQUIREMENT ID NUMBER	KPP	CSR	SECTION 4 REQUIREMENT	VERIFICATION METHOD					VERIFICATION CLASS			
						N/A	1	2	3	4	A	B	C	D
4.1.1.7	3.1.3.3.2.4	TSM0066			4.1.3.3.2.4				X			X		
4.1.1.6	3.1.3.3.2.5	TSM0067			4.1.3.3.2.5				X			X		
4.1.1.7	3.1.3.3.2.5	TSM0068			4.1.3.3.2.5				X			X		
4.1.1.7	3.1.3.3.2.6	TSM0069			4.1.3.3.2.6				X			X		X
4.1.1.7	3.1.3.3.2.7	TSM0070	X		4.1.3.3.2.7				X			X		
4.1.1.6	3.1.3.4	TSM0071			4.1.3.4			X						
4.1.1.6	3.1.3.4.1	TSM0072			4.1.3.4.1			X						X
4.1.1.6	3.1.3.4.2	TSM0073			4.1.3.4.2			X						X
4.1.1.7	3.2	TSM0074			4.2				X			X		
4.1.1.7	3.2.1	TSM0075			4.2.1				X			X		
4.1.1.7	3.2.1.1	TSM0076			4.2.1.1				X			X		
4.1.1.8e	3.2.5.1.1	TSM0077			4.2.5.1.1				X			X		
4.1.1.8e	3.2.5.1.1	TSM0078			4.2.5.1.1				X			X		
4.1.1.8e	3.2.5.1.1	TSM0079		X	4.2.5.1.1				X			X		
4.1.1.8e	3.2.5.1.1	TSM0080			4.2.5.1.1				X			X		
4.1.1.8e	3.2.5.1.1	TSM0081			4.2.5.1.1				X			X		
4.1.1.8f	3.2.5.1.2	TSM0082			4.2.5.1.2				X			X		
4.1.1.8f	3.2.5.2	TSM0083			4.2.5.2				X			X		
4.1.1.8f	3.2.5.2	TSM0084			4.2.5.2				X			X		
4.1.1.8a	3.2.5.2.1	TSM0085			4.2.5.2.1					X		X		
4.1.1.8f	3.2.5.2.2	TSM0086			4.2.5.2.2					X		X		X
4.1.1.8f	3.2.5.2.2	TSM0087			4.2.5.2.2					X		X		X

TABLE IV. Requirement/Verification Cross-Reference Matrix

<u>VERIFICATION METHOD</u>		<u>VERIFICATION CLASS</u>													
N/A – NOT APPLICABLE		A – FIRST ARTICLE Hardware Testing													
1 – ANALYSIS		B – PAT I													
2 – DEMONSTRATION		C – PAT II													
3 – EXAMINATION		D – FIRST ARTICLE SIT (Gov't Conducted)													
4 – TEST		CSR – CRITICAL SYSTEM REQUIREMENT KPP – KEY PERFORMANCE PARAMETER													
ORD	SECTION 3 REQUIREMENT	REQUIREMENT ID NUMBER	KPP	CSR	SECTION 4 REQUIREMENT	VERIFICATION METHOD					VERIFICATION CLASS				
						N/A	1	2	3	4	A	B	C	D	
4.1.1.7	3.2.5.2.3	TSM0088	X		4.2.5.2.3				X			X			
4.1.1.8e	3.2.5.2.4	TSM0089			4.2.5.2.4				X			X			
4.1.1.8d	3.2.5.2.5	TSM0090			4.2.5.2.5		X					X			
4.1.1.8f	3.2.5.2.6	TSM0091			4.2.5.2.6				X			X			
4.1.1.8f	3.2.5.2.7	TSM0092			4.2.5.2.7				X			X			
4.1.1.8f	3.2.5.2.7	TSM0093			4.2.5.2.7				X			X	X		
4.1.1.8f	3.2.5.2.7	TSM0094			4.2.5.2.7		X					X			
4.1.1.8f	3.2.5.2.7	TSM0095			4.2.5.2.7			X				X			
4.1.1.8f	3.2.5.2.8	TSM0096			4.2.5.2.8				X			X			
4.1.1.8f	3.2.5.2.8	TSM0097			4.2.5.2.8				X			X	X		
4.1.1.8f	3.2.5.2.8	TSM0098			4.2.5.2.8				X			X	X		
4.1.1.8f	3.2.5.2.9	TSM0099			4.2.5.2.9				X			X			
4.1.1.8f	3.2.5.2.9	TSM0100			4.2.5.2.9				X			X			
4.1.1.8f	3.2.5.2.9	TSM0101			4.2.5.2.9				X			X			
4.1.1.8f	3.2.5.2.9	TSM0102			4.2.5.2.9				X			X			
4.1.1.8f	3.2.5.2.9	TSM0103			4.2.5.2.9				X			X			
4.1.1.8f	3.2.5.2.9	TSM0104			4.2.5.2.9				X			X			
4.1.1.8f	3.2.5.3.1	TSM0105		X	4.2.5.3.1				X			X			
4.1.1.7	3.2.5.3.2	TSM0106	X		4.2.5.3.2				X			X			
4.1.1.8f	3.2.6.1	TSM0107			4.2.6.1				X			X			
4.1.1.8f	3.2.6.1	TSM0108			4.2.6.1				X			X			
4.1.1.8f	3.2.6.1	TSM0109			4.2.6.1				X			X			

TABLE IV. Requirement/Verification Cross-Reference Matrix

<u>VERIFICATION METHOD</u>		<u>VERIFICATION CLASS</u>												
N/A – NOT APPLICABLE		A – FIRST ARTICLE Hardware Testing												
1 – ANALYSIS		B – PAT I												
2 – DEMONSTRATION		C – PAT II												
3 – EXAMINATION		D – FIRST ARTICLE SIT (Gov't Conducted)												
4 – TEST		CSR – CRITICAL SYSTEM REQUIREMENT KPP – KEY PERFORMANCE PARAMETER												
ORD	SECTION 3 REQUIREMENT	REQUIREMENT ID NUMBER	KPP	CSR	SECTION 4 REQUIREMENT	VERIFICATION METHOD				VERIFICATION CLASS				
						N/A	1	2	3	4	A	B	C	D
4.1.1.8f	3.2.6.2.1	TSM110			4.2.6.2.1		X					X		
4.1.1.8f	3.2.6.2.2	TSM111			4.2.6.2.2		X					X		
4.1.1.8f	3.2.6.2.3	TSM112			4.2.6.2.3		X					X		
4.1.1.8a	3.2.7	TSM113			4.2.7				X			X		
4.1.1.8a	3.2.7.1	TSM114			4.2.7.1		X					X		
4.1.1.8a	3.2.7.2	TSM115		X	4.2.7.2				X			X		
4.1.1.8c	3.2.7.3	TSM116			4.2.7.3		X					X		
4.1.1.8b	3.2.7.4	TSM117		X	4.2.7.4				X			X		
4.1.1.8c	3.2.7.5	TSM118			4.2.7.5		X					X		
4.1.1.8f	3.2.7.6	TSM119			4.2.7.6		X					X		
4.1.1.8e	3.2.7.7	TSM120		X	4.2.7.7				X			X		
4.1.1.8f	3.2.7.8	TSM121			4.2.7.8		X					X		
4.1.1.8f	3.2.7.9	TSM122			4.2.7.9				X			X		
4.1.1.8c	3.2.7.10	TSM123			4.2.7.10				X			X		
4.1.1.8f	3.2.7.11	TSM124			4.2.7.11				X			X		
4.1.1.8f	3.2.7.11	TSM125			4.2.7.11				X			X		
4.1.1.8f	3.2.7.11	TSM126			4.2.7.11				X			X		
4.1.1.8f	3.2.7.11	TSM127			4.2.7.11				X			X		
4.1.1.8f	3.2.7.11	TSM128			4.2.7.11				X			X		
4.1.1.8f	3.2.7.11	TSM129			4.2.7.11		X					X		
4.1.1.8f	3.2.7.11	TSM130			4.2.7.11		X					X		
4.1.1.9	3.2.8	TSM131			4.2.8				X			X		

TABLE IV. Requirement/Verification Cross-Reference Matrix

<u>VERIFICATION METHOD</u>		<u>VERIFICATION CLASS</u>														
N/A – NOT APPLICABLE		A – FIRST ARTICLE Hardware Testing														
1 – ANALYSIS		B – PAT I														
2 – DEMONSTRATION		C – PAT II														
3 – EXAMINATION		D – FIRST ARTICLE SIT (Gov't Conducted)														
4 – TEST		CSR – CRITICAL SYSTEM REQUIREMENT KPP – KEY PERFORMANCE PARAMETER														
ORD	SECTION 3 REQUIREMENT	REQUIREMENT ID NUMBER	KPP	CSR	SECTION 4 REQUIREMENT	VERIFICATION METHOD					VERIFICATION CLASS					
						N/A	1	2	3	4	A	B	C	D		
4.1.1.8f	3.2.8.1	TSM132			4.2.8.1			X				X				
4.1.1.8f	3.2.8.1	TSM133			4.2.8.1			X				X				
4.1.1.8f	3.2.8.2	TSM134			4.2.8.2			X				X				
4.1.1.8f	3.2.8.2	TSM135			4.2.8.2			X				X				
4.1.1.8f	3.3	TSM136			4.3.				X			X				
4.1.1.8f	3.3.1	TSM137			4.3.1				X			X				
4.1.1.8f	3.3.1.1	TSM138			4.3.1.1				X			X	X			
4.1.1.8f	3.3.1.2	TSM139			4.3.1.2				X			X				
4.1.1.8f	3.3.1.3	TSM140			4.3.1.3			X				X				
4.1.1.8c	3.3.1.4	TSM141			4.3.1.4				X			X	X			
4.1.1.8f	3.3.1.5	TSM142			4.3.1.5				X			X	X			
4.1.1.8f	3.3.1.6	TSM143			4.3.1.6				X			X	X			
4.1.1.8f	3.3.1.7	TSM144			4.3.1.7				X			X	X			
4.1.1.8f	3.3.2	TSM145			4.3.2				X			X	X			
4.1.1.8f	3.3.2	TSM146		X	4.3.2					X		X	X			
4.1.1.8f	3.3.3	TSM147			4.3.3				X			X	X			
4.1.1.8f	3.3.3.1	TSM148			4.3.3.1				X			X	X			
4.1.1.8f	3.3.3.1	TSM149			4.3.3.1				X			X	X			
4.1.1.8f	3.3.3.1	TSM150			4.3.3.1				X			X	X	X		
4.1.1.8f	3.3.3.1	TSM151			4.3.3.1			X				X	X			
4.1.1.8f	3.3.3.1	TSM152			4.3.3.1				X			X	X			
4.1.1.8f	3.3.3.1	TSM153			4.3.3.1			X				X	X			

TABLE IV. Requirement/Verification Cross-Reference Matrix

<u>VERIFICATION METHOD</u>		<u>VERIFICATION CLASS</u>												
N/A – NOT APPLICABLE		A – FIRST ARTICLE Hardware Testing												
1 – ANALYSIS		B – PAT I												
2 – DEMONSTRATION		C – PAT II												
3 – EXAMINATION		D – FIRST ARTICLE SIT (Gov't Conducted)												
4 – TEST		CSR – CRITICAL SYSTEM REQUIREMENT KPP – KEY PERFORMANCE PARAMETER												
ORD	SECTION 3 REQUIREMENT	REQUIREMENT ID NUMBER	KPP	CSR	SECTION 4 REQUIREMENT	VERIFICATION METHOD				VERIFICATION CLASS				
						N/A	1	2	3	4	A	B	C	D
4.1.1.8f	3.3.3.1	TSM154			4.3.3.1	X					X			
4.1.1.8f	3.3.3.1	TSM155			4.3.3.1			X			X	X		
4.1.1.8f	3.3.3.1	TSM156			4.3.3.1			X			X			
4.1.1.8f	3.3.3.1	TSM157			4.3.3.1			X			X			
4.1.1.8f	3.3.3.1	TSM158			4.3.3.1			X			X	X		
4.1.1.8f	3.3.4	TSM159			4.3.4			X			X	X		
4.1.1.8f	3.3.5	TSM160			4.3.5			X			X			
4.1.1.8f	3.3.6.1	TSM161		X	4.3.6.1			X			X			
4.1.1.8f	3.3.6.2	TSM162			4.3.6.2			X			X			
4.1.1.8f	3.3.6.3	TSM163			4.3.6.3	X								
4.1.1.8f	3.3.6.3	TSM164			4.3.6.3				X		X	X		
4.1.1.8f	3.3.6.3	TSM165			4.3.6.3					X	X	X		
4.1.1.8f	3.3.6.3	TSM166			4.3.6.3					X	X	X		
4.1.1.8f	3.3.6.4	TSM167			4.3.6.4				X					
4.1.1.8f	3.3.6.4	TSM168			4.3.6.4				X					
4.1.1.8f	3.3.6.4	TSM169			4.3.6.4				X					
4.1.1.8f	3.3.6.4	TSM170			4.3.6.4					X	X	X		
4.1.1.8f	3.3.6.4	TSM171			4.3.6.4					X	X	X		
4.1.1.8f	3.3.7	TSM172			4.3.7					X	X	X		
4.1.1.8f	3.3.8	TSM173			4.3.8				X			X		
4.1.1.8f	3.3.8	TSM174			4.3.8					X		X		

Appendix A
Glossary

<u>ACRONYM</u>	<u>DEFINITION</u>
ACC	Air Combat Command
ACP	Allied Communication Publication
ADNX	Access Communications Resource Manager
ADPE	Automated Data Processing Equipment
AF	Air Force
AFB	Air Force Base
AFFOR	Air Force Forces
AFIC	Air Force Intelligence Center
AIS	Air Intelligence Squadron
AFFOR	Air Force Forces
AMC	Air Mobility Command
AME	Air Mobility Element
AMEP	Air Mobility Element Package
AMI	Alternate Mark Inversion
AMSL	Above Mean Sea Level
AOR	Area of Operational Responsibility
ARFOR	Army Forces
AUI	Attachment Unit Interface
AUTODIN	Automatic Digital Network
BCP	Base Communications Package
B8ZS	Bipolar with 8 Zero Substitution
BER	Bit Error Rate
BIT	Built In Test
BMSL	Below Mean Sea Level
BRI	Basic Rate Interfaces
CAF	Combat Air Force
CAFSWS	CAF Standard Workstation
CALEA	Commission on Accreditation for Law Enforcement Agencies
CAMS	Core Automated Maintenance System
CARC	Chemical Agent Resistant Coating
CBR	Chemical Biological Radiological
CCA	Circuit Card Assembly
CCI	Controlled Cryptographic Item
CCITT	Consulting Committee for International Telegraphy & Telephony
CCIS	Common Channel Interoffice Signaling
CD	Compact Disk
CDI	Conditioned Diphas
CDS	Compact Digital Switch
CFE	Contractor Furnished Equipment

CDM	Conditioned Diphase Modem
CG	Center of Gravity
CI	Customer Installation
C2IPS	Command and Control Information Processing System
cm	Centimeter
CO	Central Office
COMSEC	Communications Security
CONLET	Connector Outlet
CONUS	Continental United States
COTS	Commercial-off-the-Shelf
CP	Communications Processor
CPP	Communications Patch Panels
CS	Circuit Switch
CSU	Channel Service Unit
CTS	Clear To Send
dB	Decibel
dB(A)	Decibel A-weighted
DC	Direct Current
DCE	Data Communications Equipment
DCO	Dial Central Office
DCP	Distributed Communications Processor
DDN	Defense Data Network
DDS	Data Distribution System
DED	Datagram Encryption Device
DEOS	Deployed End Office Suite
DID	Direct Inward Dial
DIV	Division
DISA	Defense Information System Agency
DISN	Defense Information System Network
DITS	Deployed Integrated Transport Suite
DMF	Depot Maintenance Float
DMS	Defense Message System
DOD	Department of Defense
DRSN	Defense RED Switch Network
DSN	Defense Switched Network
DSSGR	Deployed Switch Systems Generic Requirements
DSU	Digital Service Unit
DTC	Digital Technical Control
DTE	Data Terminal Equipment
DTG	Digital Transmission Group
DTMF	Dual Tone Multiple Frequency
DVS	DISN Video Services
DVX	Deployed Voice eXchange
DWTS	Digital Wideband Transmission System

E & M	Ear and Mouth
EC	Echo Canceller
ECS	Environmental Control System
ECU	Environmental Control Unit
EIA	Electronic Industries Association
EMI	Electromagnetic Interference
ESC	Electronics System Center
ESD	Electrostatic Discharge
ESF	Extended Superframe Format
ESS	Environmental Stress Screening
EU	End User
FAX	Facsimile
FCC	Federal Communications Commission
FEC	Forward Error Correction
FFD	Fraction of Failures Detected
FFI	Fraction of Failures Isolated
FOM	Fiber Optic Modem
FSSG	Force Service Support Group
FX	Foreign Exchange
FXO	Foreign Exchange Office
FXS	Foreign Exchange Subscriber
GBNP	Global Block Numbering Plan
GDSS	Global Decision Support System
GSCR	Generic Switching Center Requirements
GSTP	Generic Switch Test Plan
GFE	Government Furnished Equipment
GFI	Ground Fault Interrupt
GHz	Gigahertz
GMF	Ground Mobile Forces
GOTS	Government-off-the-Shelf
GPEE	General Purpose Encryption Equipment
GPETE	General Purpose Electronic Test Equipment
GPP	Group Patch Panel
HOC	Hermaphroditic On-line Connector
HS	High Speed
Hz	Hertz
IEEE	Institute of Electrical and Electronics Engineers
IITS	Inter Theater Imagery Transmission System
ISDN	Integrated Digital Services Network
IP	Internet Protocol
IPS	Information Processing System

JECCS	Joint Enhanced Core Communications System
JITC	Joint Interoperability Test Center
JTF	Joint Tactical Forces
JWICS	Joint Worldwide Intelligence Communications System
kb/s	Kilobits per Second
kHz	Kilohertz
km	Kilometer
LAN	Local Area Network
LARC	Lighter Amphibious Resupply Cargo
LCM	Lightweight Communications Module
LCR	Least Cost Routing
LEC	Local Exchange Carrier
LED	Light Emitting Diode
LMF	Local Management Function
LMST	Lightweight Multiband Satellite Terminal
LOS	Line-of-Sight
LRU	Line Replaceable Unit
LTU	Line Termination Unit
MAC	Media Access Control
MARFOR	Marine Forces
MAGTF	Marine Air Ground Task Force
Mb/s	Megabits per Second
MCHS	Marine Corps Common Hardware Suite
MCTSSA	Marine Corps Tactical System Software Activity
MD	Modem
MEF	Marine Expeditionary Forces
MEPDIS	Mobile Electronic Power Distribution System
MHz	Megahertz
MIB	Management Information Base
MLPP	Multi-Level Precedence and Priority
MMI	Man Machine Interface
MSC	Major Subordinate Command
MSE	Mobile Subscriber Equipment
MSG Prep	Message Preparation
MSS	Mission Support System
MST	Multiband Satellite Terminal
MTBCF	Mean Time Between Critical Failure
MTBF	Mean Time Between Failure
MTBCMA	Mean Time Between Corrective Maintenance Action
MCOTEA	Marine Corps. Operational Test and Evaluation Agency
MTTR	Mean Time To Repair
NAVFOR	Navy Forces

NBC	Nuclear, Biological and Chemical
NCI	Network Channel Interface
NEC	National Electric Code
NDI	Non-Developmental Item
NIU	Network Interface Unit
NET MGT	Network Management
NMF	Network Level Management Function
NMS	Network Management System
NRZ	Non-Return to Zero
NSA	National Security Agency
NSN	National Stock Number
OSI	Open Systems Interconnection
PBX	Private Branch Exchange
PC	Personal Computer
PCM	Pulse Code Modulation
PEP	Power Entrance Panel
PLA	Plain Language Address
PNID	Precedence Network In Dialing
POTS	Plain Old Telephone Service
PRA	Primary Rate Access
PRBS	Pseudo Random Binary Sequence
PRV	Pressure Relief Valve
PSDS	Public Switched Data Services
PSIG	Pounds Per Square Inch Gauge
PSTN	Public Service Telephone Network
PT-PT	Point-to-Point
PTT	Public Telephone and Telegraph
RAM	Random Access Memory
RDBMS	Relational Database Management System
RF	Radio Frequency
RFC	Request for Comments
RFP	Request for Proposal
RH	Relative Humidity
ROM	Read Only Memory
RSAM	Remote Subscriber Access Module
RTS	Request to Send
SATCOM	Satellite Communications
SEP	Signal Entry Panel
SF	Single Frequency
SFCC	Store and Forward Communications Center
SHF	Super High Frequency
SNMP	Simple Network Management Protocol

SORE	Send Odd Receive Even
SOW	Statement of Work
SQL	Structured Query Language
SS7	Signaling System 7
STE	Secure Telephone Equipment
STU	Secure Terminal Unit
TAC-4	Tactical Advanced Computer (version 4)
TACC	Tactical Air Command Center
TCP	Transmission Control Protocol
TDC	Theater Deployable Communications
TDF	Tactical Digital Facsimile
TDN	Tactical Data Network
TED	Trunk Encryption Device
TELNET	Telecommunications Network
TGM	Trunk Group Multiplexer
TMS	Tele-Management System
TRANSEC	Transmission Security
TRC	Transmission Resource Controller
TRI-TAC	Tri-Services Tactical Communications
TROPO	Troposcatter
TSM	Transition Switch Module
TUNA	Transition Unit Nest Assemblies
ULCS	Unit Level Circuit Switch
UPS	Uninterruptible Power Supply
VAC	Voltage Alternating Current
VDC	Voltage Direct Current
VDT	Video Display Terminal
VF	Voice Frequency
VNA	Virtual Network Application
VOIP	Voice Over Internet Protocol
VTC	Video Teleconferencing
WCCS	Wing Command and Control System
WRMR	War Reserve Material Requirement
WS	Work Station